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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,530

09/24/2004

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2002B044A

2777

23455 7590 07/11/2008  
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EXAMINER

BULLOCK, IN SUK C

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

07/11/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/509,530	<b>Applicant(s)</b> DUNCAN ET AL.	
	<b>Examiner</b> In Suk Bullock	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

Amendment filed 4/10/2008 is hereby acknowledged and entered. Claim 17 is canceled and newly added claim 23 is noted. Thus, claims 1-16 and 18-23 are pending in this application.

The previous Office Action (dated 1/10/2008) rejected the claims over EP 0311310 (hereinafter "EP '310") in view of WO 93/16020 (hereinafter "WO '020"). This was an obvious error since the rejection did not discuss WO '020 and nor was the reference used to reject any claims. Hence, the following is a corrected Office Action; a second non-final action.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-16 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0311310 (hereinafter "EP '310").

The EP '310 reference discloses a process for oligomerizing a lower olefin feedstock to produce substantially linear hydrocarbons of higher molecular weight than the feedstock (see page 2, lines 3-4). The feedstock is contacted with ZSM-23 which is surface deactivated with a surface deactivating agent 2,4,6-collidine (see page 2, lines 31-39 and 57-58). The olefin feedstock comprises C<sub>2</sub>-C<sub>10</sub> olefins, preferably C<sub>3</sub>-C<sub>6</sub> olefins. The conditions used to effect oligomerization include a temperature in the range of 100 to 350° C, a pressure of atmospheric to 20,000 kPa, and a WHSV of 0.01-2. See page 3, lines 1-9. When propylene or butene are oligomerized according to the disclosed process, a mixture of liquid hydrocarbon products is formed comprising at least 95% by weight of mono-olefins oligomers of the empirical formula C<sub>(n+nm)</sub>H<sub>2(n+nm)</sub> where n is 3 or 5 and m is an integer from 1 to 6, said mono-olefin oligomers comprising

at least 20 % by weight of olefins having at least 12 carbon atoms, said olefins having at least 12 carbon atoms having an average of from 0.80 to 2.00 methyl side groups per carbon chain, said olefins not having any side groups other than methyl (see page 3, lines 10-23). The oligomerization product may be used in an alkylation process to produce an alkylaromatic compound which is useful as an intermediate for the production of alkylaryl sulfonate (page 2, lines 16-22 and page 4, lines 7-10).

EP reference fails to disclose(1) a feedstock which includes iso-olefin and (2) separating a C<sub>12+</sub> fraction containing less than 0.5 atom% of quaternary carbon atoms.

With regard to the claimed feedstock comprising from about 0.1 wt% to about 25 wt% of an iso-olefin, the reference is silent as to the feedstock containing any iso-olefin. However, it is known to those skilled in the art that the feed is not 100% pure and, therefore, it would have been expected that the feed employed in the EP reference would have contained a trace or negligible amount of iso-olefin. It is noted that the lower end of the claimed range, i.e., about 0.1 wt%, may be interpreted as containing trace or negligible amount of iso-olefin because "about" permits some tolerance. *In re Ayers*, 154 F.2d 182, 69 USPQ 109.

With regard to the claimed about of quaternary carbons contained in the C<sub>12+</sub> fraction, since the process of EP employs same starting material and similar process conditions, absent any evidence to the contrary, it would have been expected that the process of EP would result in a C<sub>12+</sub> fraction containing a range of quaternary carbon atoms which would overlap with the claimed range of 0.5 atom%.

With respect to the source of the feed, it would have been obvious to select any source of feed meeting the desired feed composition.

With respect to the feed composition containing the claimed level of dimethyl ether and sulfur, since the reference is silent with regard to the specifically recited components, EP is deemed to contain an amount which would not adversely affect the process.

With respect to the downstream processing of the oligomer product as recited in claim 20 directed to hydroformylation, this is a well known process to those skilled in the art as evidenced by U.S. Patent 3,440,291.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-16 and 18-23 have been considered but are moot in view of the new ground(s) of rejection.

Please note the argument directed to the EP reference being silent with regard to the presence of isoolefin in the feed as recited in the present invention has been addressed in the above new ground of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/In Suk Bullock/  
Examiner, Art Unit 1797